

## Claims

1. A method for reducing the incidence or severity of vascular hyperreactivity in a patient in need thereof comprising administering to the patient an effective amount of an estrogen beta receptor agonist.

5 2. The method of claim 1 wherein the vascular hyperreactivity of the patient is manifested by coronary arterial vasospasm.

3. The method of claim 1 wherein the vascular hyperreactivity of the patient is manifested by hyperreactivity of peripheral arteries.

4. The method of claim 1 wherein the estrogen beta receptor agonist is 5 $\alpha$ -10 androstane-3 $\beta$ ,17 $\beta$ -diol.

5. The method of claim 1 wherein the estrogen beta receptor agonist is a derivative of 5 $\alpha$ -androstane-3 $\beta$ ,17 $\beta$ -diol that has estrogen beta receptor agonist activity.

6. The method of claim 5 wherein the derivative of 5 $\alpha$ -androstane-3 $\beta$ ,17 $\beta$ -diol is selected from the group consisting of 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-3 hemisuccinate, 5 $\alpha$ -androstan-15 3 $\beta$ ,17 $\beta$ -diol-17-sulphate sodium salt, 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-3-acetate, 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-17-acetate, 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-diacetate, 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-dibenzoate, 5 $\alpha$ -

androstan-3 $\beta$ ,17 $\beta$ -diol-dihemisuccinate, 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-dipropionate, and 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-17-hexahydrobenzoate.

7. The method of claim 1 wherein the estrogen beta receptor agonist is epiestradiol.

8. The method of claim 1 wherein the estrogen beta receptor agonist is genistein or  
5 diarylpropionitrile.

9. The method of claim 4 wherein the amount of 5 $\alpha$ -androstane-3 $\beta$ ,17 $\beta$ -diol that is administered is sufficient to obtain a serum concentration of between 30 and 3000 pg/ml.

10. The method of claim 9 wherein the amount of 5 $\alpha$ -androstane-3 $\beta$ ,17 $\beta$ -diol that is administered is sufficient to obtain a serum concentration of between 30 and 300 pg/ml.

10 11. The method of claim 1 wherein the estrogen beta receptor agonist is co-administered with a hormone replacement therapy.

12. The method of claim 11 wherein the hormone replacement therapy is selected from the group consisting of estrogen, androgen, and progestin therapy.

13. The method of claim 1 wherein the estrogen beta receptor agonist is administered  
15 to the patient by topical application to skin.

14. The method of claim 13 wherein the estrogen beta receptor agonist is in a topical preparation selected from the group consisting of a liquid, cream, gel, lotion, ointment, and transdermal patch.

15. The method of claim 1 wherein the estrogen beta receptor agonist is administered  
5 to the patient by other than topical administration to skin.

16. The method of claim 15 wherein administration is by oral, rectal, vaginal, topical, sublingual, nasal, intradermal, inhalation, or sustained implant administration routes.

17. A kit for administering an estrogen beta receptor agonist compound to a patient suffering from or at risk of vascular hyperreactivity comprising a container, a topical preparation  
10 containing an estrogen beta receptor agonist in the container, and instructions for dispensing an amount of the preparation which provides an amount of the estrogen beta receptor agonist that is effective to prevent or reduce the severity of vascular hyperreactivity.

18. The kit of claim 17 wherein the estrogen beta receptor agonist is 5 $\alpha$ -androstane-3 $\beta$ ,17 $\beta$ -diol.

15 19. The kit of claim 17 wherein the estrogen beta receptor agonist is a derivative of 5 $\alpha$ -androstane-3 $\beta$ ,17 $\beta$ -diol that has estrogen beta receptor agonist activity.

20. The kit of claim 19 wherein the derivative of 5 $\alpha$ -androstane-3 $\beta$ ,17 $\beta$ -diol is selected from the group consisting of 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-3 hemisuccinate, 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-17-sulphate sodium salt, 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-3-acetate, 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-17-acetate, 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-diacetate, 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-dibenzoate, 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-dihemisuccinate, 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-dipropionate, and 5 $\alpha$ -androstan-3 $\beta$ ,17 $\beta$ -diol-17-hexahydrobenzoate.

5           21. The kit of claim 17 wherein the estrogen beta receptor agonist is epiestradiol.

22. The kit of claim 17 wherein the estrogen beta receptor agonist is genistein or diarylpropionitrile.

10          23. The kit of claim 17 wherein the topical preparation is selected from the group consisting of a liquid, cream, gel, lotion, ointment, and transdermal patch.